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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/277,298	03/26/1999	GEORGE E. CARTER	99P7519US	3318

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EXAMINER	
ARANI, TAGHI T	

ART UNIT	PAPER NUMBER
2131	18

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/277,298	CARTER, GEORGE E.	
	Examiner	Art Unit	
	Taghi T. Arani	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11,13,14 and 16-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *13,14 and 16-31* is/are allowed.

6)☒ Claim(s) *1-11 and 32-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-11, 13-14,16-35 were pending for examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims **1-11, 32-35,** are rejected under 35 U.S.C. 103(e) as being unpatentable over Knappe et al., US pat. 6,603,774 filed Oct. 1998 and further in view of Solomon, U.S. Patent 5,974,043, issued Oct. 1999.

As per claims **1, 8**, 11 and **32-35**, Knappe et al. is directed to a packet telephony applications wherein voice packets are redirected to a codec proxy system which allow non-standard or feature specific packet voice endpoints (i.e. telephony clients with different communication stacks or codecs) to interoperate in a standard-based network, see abstract.

Knappe telephony clients are connected to packet networks through respective gateways, see col. 2, lines 40-61, see also Fig. 1, numeral elements 16 and 20.

Knappe's codec proxy system coupled to the packet network and is used for setting up calls between first telephony client (i.e. system A) and a second telephony system (i.e. system B), see col. 2, lines 62 through col. 3, line 5. Knappe's codec proxy includes a processor programmed to perform the proxy services.

Knappe further teaches that the gateways can be VoIP telephones or personal computers that include a digital signal processor and software for recording audio signals into audio packets. Knappe's codec proxy system (Fig. 1 numeral element 24) is coupled to the packet network and is used for setting up calls between telephony systems A and B (with different formatting features or codecs), see col. 2, line 62 through col. 3 line 6.

Knappe codec proxy system comprises a capability exchange broker and a packet transmitting and rebuffering circuit which can spoof the two telephony systems to provide a capability exchange proxy to determine codec choices for the first and second telephony systems A and B and generates configuration and control information that identifies the necessary transcoding required between two telephony systems, see col. 3, line 66 through col. 4, line 50, see also Fig. 2, numeral elements 24, 33, 34, 36,38.

Knappe teaches encoder and decoders used for sending packets from telephony system A and to telephony system B. Sound devices and the corresponding drivers interfacing the sound devices are inherent in Knappe's codec proxy and the telephony system codec.

That is to say, Knappe's codec proxy broker is acting as both a formatting module and an interpreting module .

Knappe fails to teach "*inserting a security algorithm within the communication path between first telephony client and a sound device on the first computer, the security algorithm performing cryptographic operations on audio data transmitted in at least one direction between the first telephony client and the sound device.*", recited in **claims 1, 8,**

and 11 *wherein the security algorithm encrypts and decrypts audio data received from the sound device and the first telephony client* **recited in claims 32-35.**

However, Solomon teaches a system and method for communicating information using the public switched telephone network and a wide data network, see abstract.

In a preferred embodiment, Solomon teaches a first communication system and a second communication system which include at least one device (such as sound card, videophone device or video-conferencing device) for processing information which is connected to the computer, see col. 5, lines 24-34, col. 17, lines 66 through col. 18, line 55.

Solomon further discloses inserting a security algorithm within the communication path between first telephony client and a sound device on the first computer, the security algorithm performing cryptographic operations (i.e. encrypting and decrypting) on audio data transmitted in at least one direction between the first telephony client and the sound device, see col. 4, lines 61 through col.5, line 34, see also col. 8, lines 19-36, col. 14, lines 39-61, col19, lines 31-42, col. 23, lines 39-52.

It would have been obvious to one ordinary skill in the art to employ scramble and descramble (i.e. encryption/decryption) feature of Solomon's invention in Knappe's method of voice packets in telephony application to conduct high security, scrambled, voice telephone conversation from interception and wiretapping, see Solomon, col. 8, lines 19-25.

Claims **2-3, 6-7 and 9-10** are rejected under 35 U.S.C. 103(e) as being unpatentable over Knappe et al. and Solomon as applied to claims 1, 8 and 11 above and

further in view of Kavsan, US Pat. No. 6, 412,069, filed Sep. 1998 (cited in the previous office actions).

As per claims 2-3,6 and 9-10 claims Kavsan is directed to a cryptographic service software which is compatible and communicates with a standard operating system computer. Kavsan's cryptographic service software is situated in kernel space (**recited in claims 3, 6 and 10**) of the operating system, see col. 2, lines 50-67.

Kavsan further teaches that the cryptographic service software is capable of encrypting hard drive data and IP packet at the driver level of the personal computer.

Kavsan's cryptographic service software allows to encrypt signals at the driver level, such as at the Ethernet port or at the modem port, video card or disk drive, etc., see col. 3, lines 17-29.

Kavsan discloses that the cryptographic service software at application space and the kernel space communicate through corresponding interfaces for encrypting and decrypting signals, see col. 3, lines 30-52. The teaching of Kavsan clearly suggests encrypting audio data received from the sound device (at the drive level) and providing the encrypted data to the cryptographic software situated at the application space and decrypting signals received from the application space at the kernel space (**recited in climes 32-35**).

That is, the Kavsan's cryptographic service software is independent of higher-level application programs (**recited in claims 2 and 9**).

It would have been obvious to one ordinary skill in the art to modify Solomon's invention to employ cryptographic service software of Kavsan in Knappe's method of

voice packets in telephony application to provide encryption /decryption to telephony clients to conduct encrypted communication at the driver level of the client computer, because application level cryptographic services such as CryptoAPI(TM) would not work at the driver level where IP packets need to be encrypted, see col. 1, lines 47-61.

As per claim 7, Kavsan 's cryptographic service software is compatible and communicates with a standard operating system computer. Kavsan's cryptographic service software is situated in kernel space of the operating system, see col. 2, lines 50-67.

Kavsan further teaches that the cryptographic service software is capable of encrypting hard drive data and IP packet at the driver level of the personal computer. That is, the Kavsan's cryptographic service software is independent of higher level application programs (i.e. telephony clients) .

It would have been obvious to one of ordinary skill in the art to employ a generic layer cryptographic service taught by Kavsan to be able to easily replace or update the algorithms when algorithms and/or the rules of cryptography change, see col. 1, lines 20-41 (Kavsan).

Claims 4, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knappe et al, Solomon and Kavsan as applied to claims 1-3 above, and further in view of Crick et al, US. Pat. No. 5,675,793 issued Oct. 1997 (cited in the previous office actions).

As per claim 4, Kavsan is silent on inserting the security algorithm between the I/O supervisor and a sound driver.

However, Crick discloses a computer system with a software system having a layered architecture, see col. 2, lines 58-67.

In Crick's computer system, computer programs in the higher layers request services of the computer programs in the lower layers., see col. 3, lines 4-16.

In doing so, an I/O supervisor passes the request to a chain of device drivers (such as sound class drivers) by invoking the component device drivers and the requested data is finally passed to the application program requesting the service, see col. 3, lines 17-44.

Crick further discloses that component device drivers may in between encrypt and decrypt (i.e. insert a security mechanism) the requested data, see col. 3, lines 31-33.

It would have been obvious to one ordinary skill in the art to employ the layered software architecture of Crick into that of Kavsan to be able to allocate and deal locate the computer memory in an efficient manner, because memory request by the operating system (i.e. application layer) is time consuming and decreases the efficiency of the computer system, see col. 1, lines 34-45.

As per claims 5, Kavsan teaches that the cryptographic service module at the kernel space includes a library of encryption algorithms and the like, see col. 3, lines 39-52. Kavsan is silent on selecting an algorithm from a group consisting of an IDEA, a DES, a GOST, an RC5, and a SEAL algorithm.

The examiner asserts that DES, IDEA, GOST, RC5 and SEAL algorithms are industry standard block cipher algorithms used in various applications where a balance on processing speed and the security level is required.

It would have been obvious to one ordinary skill in the art to adapt the Kavsan's library of encryption algorithms to select one of DES, IDEA, GOST, RC5 and the SEAL algorithm which most suits the security level and the processing speed required.

Examiner's Statement of Reasons for Allowance

Claims 13-14, 16-31 are allowed over prior art.

The following is an examiner's statement of reasons for the indication of allowable claimed subject matter.

Prior art of record, Knappe teaches a codec proxy system which allow non-standard or feature specific packet voice endpoints (i.e. telephony clients with different communication stacks or codecs) to interoperate in a standard-based network.

Knappe does not teach inserting an encryption algorithm within a communication path between a first telephony client and a second telephony client.

Kavsan teaches such encryption algorithm wherein encryption and decryption are performed at the kernel space independent of application space.

Kavsan does not teach an encryption algorithm between I/O supervisor and device driver.

Crick teaches a software layred architecture wherein memory allocation and deallocation of the computer system memory is done efficiently through an I/o supervisor.

None of the prior art of record, either taken by itself or in any combination, would have anticipated or made obvious over formatting audio signals after encryption and interpreting the signals before decryption, wherein encryption is independent of both

formatting and telephony clients. The subject matter regarded as allowable is found by the examiner in independent claims 13, 17 18, 19,20, 21, 29, 30, 31.

Dependent claims 14, 16, 22-28 are also allowed over prior art by virtue of their dependencies.

Conclusion

Any inquiry concerning this communication or earlier communications from examiner should be directed to Taghi Arani, whose telephone number is (703) 305-4274. The examiner can normally be reached Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh, can be reached at (703) 305-9648. The Fax numbers for the organization where this application is assigned is:

(703) 872-9306

Taghi Arani

Patent Examiner

7/14/2004

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